ORIGINAL PAPER

Psychological threat and extrinsic goal striving

Kennon M. Sheldon · Tim Kasser

Abstract Although people generally endorse intrinsic goals for growth, intimacy, and community more than extrinsic goals for money, appearance, and popularity, people sometimes over-emphasize extrinsic goals, to the potential detriment of their well-being. When and why does this occur? Results from three experimental studies show that *psychological threat* increases the priority that people give to extrinsic compared to intrinsic goals. This was found in the case of existential threat (Study 1), economic threat (Studies 2), and interpersonal threat (Study 3). Discussion focuses on the possible reasons why threat breeds extrinsic orientations.

A growing body of research shows that many goals can be arranged on a continuum from intrinsic to extrinsic. Goals such as self-acceptance, affiliation, and community feeling have been classified as "intrinsic," given their focus on pursuits that are typically inherently rewarding and that tend to satisfy innate psychological needs such as autonomy, competence, and relatedness (Deci and Ryan 2000). At the other end of the continuum, goals such as financial success, attractive appearance, and social popularity have been classified as "extrinsic," given their focus on external rewards, praise, and the evaluations of others. Supporting the distinction, Grouzet et al. (2005) recently demonstrated, via multidimensional scaling analyses and circular stochastic modeling, that intrinsic and extrinsic goal content formed a single bipolar dimension in the goal ratings of over 1,800 individuals from 15 cultures.

Furthermore, substantial research now demonstrates that people report less positive and more negative moods, less life-satisfaction, and less psychological adjustment when they place relatively more importance on extrinsic goals than intrinsic goals (see Kasser 2002, for a review). The association between relative extrinsic versus intrinsic value orientation (REIVO) and negative outcomes has been demonstrated in a variety of nations (e.g., Kim et al. 2003; Kasser and Ahuvia 2002; Ryan et al. 1999); in early adolescents (Cohen and Cohen 1996; Kasser and Ryan 1993), late adolescents (Vansteenkiste et al. 2007) and adults (Kasser and Ryan 1996; Sheldon and Kasser 2001) as well as college students; with idiographic (Sheldon and Kasser 1995, 1998, 2001), nomothetic (Kasser and Ryan 1993, 1996, 2001), and implicit (Schmuck 2001; Solberg et al. 2004) means of assessing goal content; and with self-report, daily diary (Kasser and Ryan 1996, Sheldon and Kasser 1995; Solberg et al. 2004), and interviewer ratings (Kasser and Ryan 1993) of well-being and adjustment. Recent work has also shown that parental REIVO predicts a variety of problematic outcomes within offspring (Duriez et al. 2007, in press).

Given that this literature demonstrates that extrinsic goals are less likely to promote well-being than are intrinsic goals, it may seem rather puzzling that extrinsic goals nevertheless seem so prevalent in the world. That is, if the goals of consumerism, status seeking, and appearance tend to be associated with such problematic outcomes,

K. M. Sheldon (✉)
Department of Psychological Sciences, University of Missouri, 112 McAlester Hall, Columbia, MO 65211, USA
e-mail: Sheldonk@missouri.edu

T. Kasser
Knox College, Galesburg, IL, USA

then why does the modern world seem so full of extrinsic concerns? What factors conspire to push people towards the extrinsic goal-strivings that ultimately are unlikely to benefit their own happiness and well-being?

Although the answer to this question is doubtless multifaceted (see e.g., Kasser and Kanner 2004), we have suggested that goal selection can become more extrinsic and less intrinsic when people experience *psychological threat* (Kasser et al. 2004; Kasser and Sheldon 2004; Sheldon 2004). Such threats lead people to feel unsafe or anxious (Chaplin 1985, p. 231), and can occur through a variety of means. For example, threats to self-esteem (Crocker and Knight 2005), social inclusion (Twenge and Baumeister 2005), people's sense of order and control (Kofta et al. 1998), and people's survival or sense of continuity (Greenberg et al. 1997), while all distinct types of threats, have at base a commonality: the individual feels a sense of insecurity regarding impending trouble, danger, or harm (American Heritage dictionary). It is also noteworthy that various types of threats listed above have all been linked to similar sorts of negative outcomes, such as inappropriate aggression (Twenge and Baumeister 2005), defensiveness (Rhodewalt and Vohs 2005), and antagonism (Heatherton and Vohs 2000).

Several lines of research evidence support the specific proposal that various types of threats can also lead individuals to focus more on extrinsic and less on intrinsic goals. For example, adolescents' goals are likely to be more extrinsically and less intrinsically oriented if they are raised by parents who are controlling and non-nurturing (Kasser et al. 1995, 2002; Williams et al. 2000) or by parents who are overly punitive or inconsistent (Cohen and Cohen 1996). Children whose parents divorce also are more likely to adopt a focus on materialistic goals (Rindfleisch et al. 1997). Controlling or dehumanizing academic environments have also been shown to be associated with increases in attractive appearance goals and decreases in community feeling goals (Sheldon and Krieger 2004). Socio-economic factors such as family poverty (Cohen and Cohen 1996; Kasser et al. 1995, 2002) and national economic difficulties (Abramson and Inglehart 1995) also are associated with an increasing focus on materialistic, extrinsic goals in life.

These correlational studies are complemented by two experimental reports which begin to suggest that psychological threats can cause increases in extrinsic and decreases in intrinsic orientations. First, Kasser and Sheldon (2000) showed that participants prompted to think about their own death tended to consume more of limited community resources and to want more luxury goods in the future. Second, Chang and Arkin (2002) showed that state-materialism increased when people who are chronically self-doubting are made to feel insecure and uncertain.

Neither set of experiments, however, examined a full range of extrinsic and intrinsic goals, as both studies focused only upon consumption and materialism.

Such empirical evidence is consistent with a variety of theoretical perspectives that imply that different kinds of threats can cause people to shift towards financial, appearance, and popularity goals and away from personal growth, affiliation, and community goals is consistent with many other theoretical positions. For example, humanistic perspectives suggest that when feelings of safety and security are threatened, individuals are less likely to focus on activities that promote growth and well-being, and more likely to concern themselves with issues such as money, image, and status (Maslow 1956, 1971; Rogers 1964). From an evolutionary perspective, it also seems likely that status, looks, and wealth may have offered important short-term means of countering threats to security and survival in our evolutionary past (Buss 2000), and thus people may be somewhat "hard-wired" to orient towards extrinsic goals in times of uncertainty. Further, the feelings of anxiety resulting from threat may lead individuals to lose access to extended self-representational systems (Kuhl and Baumann 2000), thus preventing them from thinking clearly about pursuits that would be more meaningful or growth-promoting. As a result, threats may lead individuals to be more likely to seek the kinds of "quick fixes" promoted and glorified by contemporary media and culture (Kasser et al. 2004) than they would were they to engage in thoughtful consideration.

The present studies

The present article presents three experiments designed to examine in more detail the potential impact of different types of psychological threats upon peoples' overall goal orientation. Our basic hypothesis was that when people are threatened, they will place greater emphasis on extrinsic goals compared to intrinsic goals. It is important to emphasize that this hypothesis concerns only REIVO, or the *relative* strength of extrinsic vis-à-vis intrinsic pursuits. Much if not most of the extrinsic/intrinsic goal research cited above has focused upon this composite as the primary predictor of interest (see Kasser 2002, for a review). This is because extrinsic goals are thought to be problematic only when they assume undue importance within a person's goal-system. Thus, although extrinsic pursuits (for financial success, appealing appearance, and social popularity) certainly have their place, the research and theory discussed above suggest that difficulties ensue only when they exceed intrinsic goals in strength. Our computational procedure of creating a relative strength (REIVO) measure is also consistent with the research of

Grouzet et al. (2005) showing that intrinsic and extrinsic represent the bipolar ends of a single underlying dimension.

Study 1

In Study 1 we used a mortality salience induction to induce an existential threat (Greenberg et al. 1997), in an attempt to show that priming death promotes stronger extrinsic versus intrinsic goal endorsement. Thus, the study aimed to expand on past research showing that mortality salience increases consumption behavior (Kasser and Sheldon 2000) by examining a broader set of goals, including materialistic as well as other extrinsic and intrinsic goals.

In order to assess REIVO we employed an idiographic personal goal assessment procedure (Emmons 1989; Little 1993). After a writing manipulation, participants were asked to list five salient personal goals and then to rate the relevance of each of these personal goals to six possible futures, three of which involved intrinsic orientations and three of which involved extrinsic orientations (see Sheldon and Kasser 1995, 1998). Again, our primary hypothesis was that participants whose mortality had been made salient would report that their goals were relatively more extrinsic than would subjects in the control condition.

Methods

Participants and procedure

Participants were 84 introductory psychology students (22 men and 62 women) at the University of Missouri who participated as part of a course requirement. During the experimental session participants first completed either a mortality salience induction or a control induction. After completing some filler items they listed and rated a set of personal goals. Because there were no main or interactive effects of gender in this study or in Studies 2 and 3, gender is not discussed further.

Mortality salience induction: To raise participants' awareness of death, we used the writing induction typically employed by terror management researchers (Greenberg et al. 1997). That is, 41 experimental participants were randomly assigned to "briefly describe the emotions that the thought of your own death arouses in you" and to also "briefly describe, as specifically as you can, what you think will happen to you as you physically die and once you are physically dead." The 43 control participants were instead asked to answer the same two questions with respect to the experience of listening to

music, the same methodology employed by Kasser and Sheldon (2000).[1]

Personal goal assessment: Next, participants were asked to free-list five salient personal goals (Emmons 1989; Little 1993), defined as "the projects and concerns that people have in their lives.... that we think about, plan for, carry out, and sometimes (though not always) complete or succeed at." Participants were also told that the goals should be relevant "during the next year or so." Several standard example goals were listed (i.e., "lose 15 pounds," "make more money," "decide on a personal philosophy," and "express my emotions better with friends").

To assess REIVO we used the methodology employed by Sheldon and Kasser (1995, 1998, 2001) and asked participants to rate on a 1 (no help) to 5 (very much help) scale how helpful each of their five goals would be in reaching each of three intrinsic (self-acceptance, affiliation, and community feeling) and three extrinsic (financial success, attractive appearance, and social popularity) possible futures. We then created a REIVO score by subtracting the 15 intrinsic items from the 15 extrinsic items (Sheldon and Kasser 1995, 1998, 2001; alpha = .77, after recoding).[2]

Results

Hypothesis test

To test our basic hypothesis we conducted an independent samples *t*-test comparing the REIVO score of the mortality salience participants to the average score of the control participants. This analysis revealed a significant difference between the two groups, in the predicted direction ($t(82) = 2.22$, $p < .03$; $M = -.18$ for the mortality salience condition, and $M = -.55$ for the control condition). That is, compared to participants who wrote about music, participants who wrote about death listed goals more strongly linked to extrinsic compared to intrinsic possible futures.

---

[1] Kasser and Sheldon (2000) employed a "listening to music" control condition rather than the "watching TV" condition sometimes used by terror management researchers, because of TV's association with advertising and other extrinsic messages. Notably, mortality salience manipulations typically do not yield effects upon self-reports of mood or anxiety, presumably because they act by priming non-conscious rather than conscious insecurities regarding death (Greenberg et al. 1997). Thus, consistent with the approach of other researchers in this area, there was no self-report manipulation check in this study.

[2] Although it is possible to examine the six values separately, we do not report such results in this article both because we had no hypotheses regarding the separate values, and also because no clear pattern of effects emerged across the three studies for the values taken singly. However, we would be happy to send these results to curious readers, upon request.

Brief discussion

Study 1 built upon Kasser and Sheldon's (2000) demonstration that mortality threats increase consumption behavior by showing that death-primed participants generated relatively more extrinsic goals, overall. These results conceptually replicate the consumption behavior findings of Kasser and Sheldon (2000), and significantly extend them by addressing a broader range of goal and value orientations.
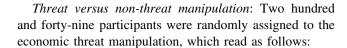
Study 2

In Study 2 we addressed a different type of threat, namely, economic threat. Specifically, we randomly assigned participants to imagine themselves either as secure and well-employed 1 year after graduation, or as insecure and under-employed 1 year after graduation. After imagining one or the other of these situations, participants rated their likely goals in this situation. Consistent with our basic hypothesis, we expected that economic threat would prompt greater endorsement of extrinsic relative to intrinsic goals (Abramson and Inglehart 1995; Kasser et al. 1995).

An additional feature of Study 2 was that we administered the goal items twice: once before the manipulation, and once after. This enabled us to control for participants' initial goals and to directly evaluate the impact of the manipulation upon *changes* in goal orientation. In other words, rather than simply assuming that participants in the two experimental conditions started with equal REIVO scores, we were able to assess and account for participants' baseline differences, thus providing a more sensitive and dynamic test of our hypothesis. A final feature of Study 2 was that we assessed participants' anticipated negative mood upon finding themselves in the situation described by the manipulation. These items served as a manipulation check.

Methods

Participants and procedure

Participants were 447 students (187 men, 260 women) in a social psychology class at the University of Missouri who participated in early Fall 2002 in exchange for extra course credit. All participants completed an in-class questionnaire that first assessed their goals. Much later in the questionnaire, they imagined themselves in one of two future situations, and then rated their anticipated emotions and goal orientations in that situation.

Threat versus non-threat manipulation: Two hundred and forty-nine participants were randomly assigned to the economic threat manipulation, which read as follows:

As you know, the economic situation right now is quite uncertain. The stock market is still falling, and economists say that we have entered a recession. In fact it is unclear when the economy will recover, as new concerns about terrorism, airline bankruptcies, the cost of new security measures, and global instability more generally, may represent a serious and permanent drain upon the economy. We're interested in your own feelings about the prospect of graduating from college, and being unable to find a job. Imagine that you graduated six months ago, but have still found nothing except low-income temporary employment, despite all your efforts. You are barely scraping by. In short, instead of being "somebody" with a bright future, it seems you are a McDonalds "nobody."

One hundred and ninety-eight participants were randomly assigned to a positive economic future manipulation, which read as follows:

Despite the current uncertainty, most economists believe that the U.S. economy is still strong. Although we may be in a temporary recession, there is no reason to believe that it will not fully recover. Indeed, given the U.S.'s position at the forefront of the information technology and genetic engineering fields, it seems likely that the economy will continue to expand throughout the next decade. We're interested in your own feelings about the prospect of graduating from college, and finding an excellent job in an expanding economy. Imagine that you graduated 6 months ago, and have already found the position of your dreams. You have plenty of money to purchase the things you want. In short, you have gone from being a college 'nobody,' to being 'somebody,' with a bright future."

As can be seen, we equated the two manipulations on length and sentence structure.

Manipulation check: Following the manipulation, participants were asked to rate how anxious and how upset they would feel if they were in this situation, on a 1 (not at all) to 5 (very much) scale. The two negative affect items were averaged for each participant (coefficient alpha = .50, $r = .34$).

Goal measures: At the beginning of the questionnaire, participants read "The questions below ask you about aspirations you may have for the future. For each item, fill in a number which indicates how important it is to you that the goal be attained in the future." The six items were based on statements taken from the Aspiration Index

(Kasser and Ryan 1993, 1996, 2001), and have been used successfully in past research (Sheldon et al. 2003; Sheldon in press). Three of the items represented the three intrinsic domains assessed in Study 1 (i.e., "I will assist people who need it, asking nothing in return," "I will continue to grow and learn new things," and "I will have deep, enduring relationships"), and three represented the three extrinsic domains assessed in Study 1 (i.e., "My name will be known by many people," "I will have many expensive possessions," and "My image will be one that others find appealing"). All items were rated on a 1 (not at all important) to 5 (very important) scale.

Afterwards, several scales irrelevant to the current study were presented. Next came the threat manipulation and the manipulation-check items. Next, the six goal items were administered again, preceded by the instructions "Below are several values or goals. Please rate how important each would be to you, if you were in this situation." Although the same 1–5 scale was employed as before, the questions were worded slightly differently to fit the hypothetical context (e.g., "I would want to have deep, enduring relationships"). REIVO scores were computed from the pre- and post-manipulation ratings separately by subtracting the three intrinsic items from the three extrinsic items. Coefficient alphas were .53 and .56 for these two six-item measures, after recoding the intrinsic items.

Results

Manipulation check: To evaluate whether the manipulations had the expected effects, we first conducted an independent samples t-test on the negative mood variable, using condition assignment as the grouping variable. This analysis revealed a reliable difference in the expected direction (for the threatened group, $M = 3.83$, $SD = .97$; for the non-threatened group, $M = 2.29$, $SD = .84$; $t(445) = 18.01$, $p < .01$).

Hypothesis test: To evaluate our primary hypothesis, we conducted a 2 (Condition: Threat versus No Threat) × 2 (Time of administration: Pre versus Post) mixed model ANOVA upon the two REIVO scores, with repeated measures on the second factor. Higher scores on REIVO represent relatively more extrinsic goals (and relatively less intrinsic goals). This analysis revealed that participants in the no threat condition did not change their goal orientation from time 1 to time 2 ($Ms = -1.59$ and -1.63, respectively, ($t(248) = .70$, *ns*), whereas participants in the threat condition became relatively more extrinsic from Time 1 to Time 2 ($Ms = -1.57$ and -1.43, respectively, ($t(197) = 2.51$, $p = .01$). Reflecting this, a significant condition by time of administration interaction was observed ($F(1,445) = 5.59$, $p < .02$). There were no main effects of either time of administration or scenario condition.

Brief discussion

Study 2 built upon Study 1 by manipulating a different type of psychological threat. Again consistent with our hypothesis, participants made to feel temporarily anxious about their economic future gravitated towards extrinsic goals and away from intrinsic goals. The repeated-measure results show that threats can actually shift peoples' goals away from an initial baseline, providing dynamic evidence for the processes at work.

Study 3

Studies 1 and 2 found support for our basic hypothesis in the domains of existential and economic threat. Again, however, we believe that the pattern of results should hold for other types of threat as well. Thus, in Study 3, we directly addressed the source of insecurity identified by Rogers (1964), namely conditional positive regard. As mentioned in the introduction, conditional positive regard occurs when important others accept one only if one meets those peoples' standards. The fact that one cannot necessarily reach those standards creates chronic anxiety, according to Rogers (1964); one never knows when rejection may come. Thus, this form of threat involves uncertainty and instability regarding others' continued approval and acceptance.

To manipulate conditional positive regard (i.e., interpersonal threat) we used a visualization exercise developed by Baldwin and colleagues (Baldwin and Holmes 1987; Baldwin and Sinclair 1996). Baldwin et al. found that priming participants to think of an important but contingently accepting other lead to more negative self-evaluations after failure and greater accessibility of rejection words, compared to those primed to think of a non-contingently accepting other (see also Arndt et al. 2002). In the current study we hypothesized that the interpersonal threat induced by thinking about a contingently accepting other would also increase REIVO. Such a hypothesis is consistent with past cross-sectional and longitudinal studies showing correlations between non-nurturant parental styles and the content of peoples' goals and aspirations (Kasser et al. 1995, 2002; Williams et al. 2000); here, we attempt to provide an experimental demonstration of these ideas. Specifically, we compared the interpersonal threat condition to another condition in which participants envisioned an important other who accepts them unconditionally.

An additional feature of Study 3 is that it included a neutral control group, in which participants were primed to think of casual acquaintances. This allowed us to contrast both a conditional acceptance condition and a non-conditional acceptance condition with a neutral control condition in which acceptance is presumably not an issue.
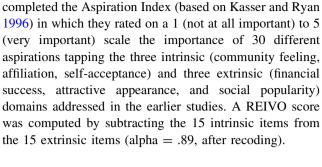
Method

Participants and procedure

Participants were 222 introductory psychology students (84 men and 138 women) at the University of Missouri who participated as part of a course requirement. Participants attended a questionnaire session in which they first engaged in a guided visualization task (Arndt et al. 2002) and then completed the Aspiration Index (Kasser and Ryan 1996).

Guided visualization: The instructions began by asking participants to write down the initials of three people. The first was a "famous person, possibly a person from television, movies, sports, politics, or anyone else in the public eye." The second was a "casual acquaintance, a person with whom you do not interact frequently." Depending on the participant's condition assignment, the third person was either (a) "a person who clearly likes you, tends to be very accepting and non-evaluative of you, and simply accepts you for who you are," (b) "a person who clearly likes you, tends to be very evaluative of you, and seems to accept you only to the extent that you live up to certain standards of performance," or (c) "a person who is a co-worker or a classmate with whom you interact for business or academic purposes but rarely or never interact with socially."

Next, participants were asked to "visualize one of the people you named on the previous questionnaire." To identify the person to be visualized, the number "3" was hand-written into a blank in every questionnaire (to suggest to participants that they could just as easily have been assigned to write about person number 1 or 2). Seventy-three participants visualized the contingently accepting other, 69 participants visualized the non-contingently accepting other, and 80 participants visualized the co-worker or classmate (i.e., the control condition). Participants were asked to take some time to picture the person in their minds, "as if you were with them." The instructions also cued participants to think about the color of the person's eyes or hair, the person's tone of voice, and the feelings they typically have in the person's presence. Finally, participants were asked to rate the visualization on several dimensions. As per Arndt et al. 2002, these rating data were collected merely to distract participants from the true purpose of the visualization, which was to differentially prime the participants.[3]

---

[3] No manipulation checks were given in Study 3; instead we relied on past findings indicating that the contingently-accepting other visualization induces greater insecurity and defensiveness, as indexed by greater self-handicapping (Arndt et al. 2002), greater desire for downward social comparison information (Schimel et al. 2001), and greater accessibility of rejection words (Baldwin and Sinclair 1996).

Goal assessment: Following the prime, participants completed the Aspiration Index (based on Kasser and Ryan 1996) in which they rated on a 1 (not at all important) to 5 (very important) scale the importance of 30 different aspirations tapping the three intrinsic (community feeling, affiliation, self-acceptance) and three extrinsic (financial success, attractive appearance, and social popularity) domains addressed in the earlier studies. A REIVO score was computed by subtracting the 15 intrinsic items from the 15 extrinsic items (alpha = .89, after recoding).

Results

Hypothesis test

To test our basic hypothesis, we submitted the REIVO variable to an ANOVA with condition (non-contingently accepting other, neutral other, contingently accepting other) as a between-subjects factor with three levels. There was a linear pattern such that participants reported the lowest REIVO score in the non-contingently accepting other condition and the highest REIVO in the contingently accepting other condition, with the mean for the neutral condition falling in the middle ($Ms = -1.80, -1.40$, and -1.27, respectively). The omnibus main effect was significant ($F(2, 219) = 6.16$, $p < .01$). Most important for our hypothesis, follow-up t-tests revealed that the positive (non-contingent acceptance) and negative (contingent acceptance) conditions significantly differed from each other ($Ms = -1.80$ and -1.27, $t(140) = 3.46$, $p < .01$). The non-contingent acceptance condition differed significantly from the neutral condition ($Ms = -1.80$ and -1.40, $t(147) = 2.56$, $p = .01$) although the contingent acceptance condition did not differ from the neutral condition ($Ms = -1.27$ and -1.40, $t(151) = .84$, ns).

Brief discussion

Study 3 replicated the general pattern of the earlier studies, showing that interpersonal threat can also prompt people to shift toward extrinsic and away from intrinsic goals. In particular, compared to participants asked to think of an unconditionally accepting other, participants asked to think of a contingently accepting other gave more emphasis to extrinsic relative to intrinsic goals. Interestingly, those asked to think of a casual acquaintance (in the neutral control condition) reported goals similar to those asked to think of a contingently accepting other, suggesting that both types of social partner might increase extrinsic orientations, relative to unconditionally accepting partners. It may be that "mere" acquaintances are also viewed as only contingently accepting, i.e., as people who might pass negative judgment if one does or says the wrong things.

This seems sensible given that self-presentational and social anxiety concerns mostly arise during interactions with peers who are strangers (Baumeister and Twenge 2003). In contrast, the more uncommon case of "someone who clearly likes you, tends to be very accepting and non-evaluative of you, and simply accepts you for who you are" may best facilitate movement in towards intrinsic and away from extrinsic goals (Duriez et al. 2007, in press). Future research will be needed to explore the idea that social acquaintances can be interpersonally threatening just as overly demanding parents or mentors can be threatening.

General discussion

These three studies support our hypothesis that psychological threat can push people away from intrinsic and towards extrinsic goals. Although the results are conceptually consistent with prior correlational findings, they also go beyond them by demonstrating a causal connection between threat and goal reports using experimental methodologies and by showing that three distinct types of threat produce a similar effect. Specifically, in Study 1, participants threatened with reminders of their own mortality subsequently listed goals that were more linked to extrinsic outcomes than intrinsic outcomes, compared to the goals listed by control participants. Study 2 focused on a different type of threat, showing that participants threatened with the possibility of underemployment during a recession became more extrinsic relative to intrinsic in their goals, compared to participants who imagined being sufficiently employed. The repeated measures design of Study 2 supports our dynamic assumptions concerning the effects of insecurity. Finally, Study 3 manipulated a third type of threat, showing that, compared to participants who imagined being with someone who accepts them for who they are, participants who imagined being with a person who only contingently accepts them, or with a causal acquaintance, also reported relatively more emphasis on extrinsic goals.

What stands out across these studies, then, is that when people are threatened existentially, economically, or interpersonally, they orient more towards goals such as financial success, popularity, and image and less towards goals such as personal growth, affiliation, and community contribution. The designs of our studies do not allow us to document the exact psychic processes responsible for these common effects, but future research might explore two possibilities. Perhaps threats activate psychological needs for security and safety, thus leading individuals to place less focus on intrinsic goals reflecting "higher level needs" and instead focus on the kinds of pursuits that humanists have suggested occur in individuals primarily concerned

with security needs—money, image, and status (Maslow 1971; Rogers 1964). Said differently, threat may prompt a search for security at the expense of self-actualization. Another explanation might suggest that when threatened, individuals are evolutionarily predisposed to orient towards aims that helped increase our ancestors' likelihood of immediate survival during difficult times. Because status, image, and sufficient resources were probably helpful (at least in the short term) in these regards, it may be that under conditions of threat, contemporary humans still orient towards such pursuits, despite the fact that such goals may detract from happiness and well-being (Buss 2000).

Future research can also address several other limitations of our studies. First, we only examined short-term shifts in relative goal preferences—mixed experimental-longitudinal research will be needed to determine if such shifts endure. Even if most individuals do ultimately return to their initial baselines of goal pursuit after a threat has passed, it may be that people unfortunate enough to experience frequent short-term threats to security would, over time, evidence more lasting shifts towards extrinsic goals and thus such goals may become more deeply entrenched in their goal systems. Second, these studies only employed college-age samples within one region of the U.S. It would be useful to establish the generalizability of this pattern of results through attempted replications with samples of other ages, regions, or nations. Because psychological threat and the need to deal with threat are presumably inherent features of human nature, we would expect that the current results would replicate in many different types of samples, although future research will be needed to establish this. Third, it would be useful to assess psychological need-satisfaction as a potential mediator of the effects observed herein. For example, self-determination theory (Deci and Ryan 2000) specifies three basic needs, for autonomy, competence, and relatedness. Psychological threat, as manipulated in these studies, may work in part by threatening to deprive participants of future need-satisfaction; such research remains to be conducted.

References

Abramson, P. R., & Inglehart, R. (1995). *Value change in global perspective*. Ann Arbor, MI: The University of Michigan Press.

Arndt, J., Schimel, J., Greenberg, J., & Pyszczynski, T. (2002). The intrinsic self and defensiveness: Evidence that activating the intrinsic self reduces self-handicapping and conformity. *Personality and Social Psychology Bulletin, 28*, 671–683.

Baldwin, M. W., & Holmes, J. G. (1987). Salient private audiences and awareness of the self. *Journal of Personality & Social Psychology, 52*(6), 1087–1098.

Baldwin, M., & Sinclair, L. (1996). Self-esteem and "if....then" contingences of interpersonal acceptance. *Journal of Personality and Social Psychology, 71*, 1130–1141.

Baumeister, R. F., & Twenge, J. M. (2003). The social self. In T. Millon & M. J. Lerner (Eds.), *Handbook of psychology: Personality and social psychology* (Vol. 5, pp. 327–352). Hoboken, NJ, US: John Wiley and Sons.

Buss, D. M. (2000). The evolution of happiness. *American Psychologist, 55*, 15–23.

Chang, L., & Arkin, R. M. (2002). Materialism as an attempt to cope with uncertainty. *Psychology and Marketing, 19*, 389–406.

Chaplin, J. P. (1985). *Dictionary of psychology*. New York: Bantam Doubleday.

Cohen, P., & Cohen, J. (1996). *Life values and adolescent mental health*. Mahwah, NJ: Erlbaum.

Crocker, J., & Knight, K. M. (2005). Contingencies of self-worth. *Current Directions in Psychological Science, 14*, 200–203.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.

Duriez, B., Soenens, B., & Vansteenkiste, M. (2007). In search of the antecedents of adolescent authoritarianism: The relative contribution of parental goal promotion and parenting style dimensions. *European Journal of Personality, 21*, 507–527.

Duriez, B., Soenens, B., & Vansteenkiste, M. (in press). The intergenerational transmission of authoritarianism: The mediating role of parental goal promotion. *Journal of Research in Personality*.

Emmons, R. A. (1989). The personal strivings approach to personality. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology* (pp. 87–126). Hillsdale, N. J.: Erlbaum.

Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 61–139). San Diego, Ca, US: Academic Press.

Grouzet, F., Kasser, T., Ahuvia, A., Dols, J., Kim, Y., Lau, S., Ryan, R., Saunders, S., Schmuck, P., & Sheldon, K. (2005). The structure of goal contents across 15 cultures. *Journal of Personality and Social Psychology, 89*, 800–816.

Heatherton, T. F., & Vohs, K. D. (2000). Interpersonal evaluations following threats to self: Role of self-esteem. *Journal of Personality and Social Psychology, 78*, 725–736.

Kasser, T. (2002a). *The high price of materialism*. Cambridge, MA: MIT Press.

Kasser, T., & Ahuvia, A. C. (2002). Materialistic values and well-being in business students. *European Journal of Social Psychology, 32*, 137–146.

Kasser, T., & Kanner, A. (2004). Where is the psychology of consumer culture? In T. Kasser & A. Kanner (Eds.), *Psychology and consumer culture: The struggle for a good life in a materialistic world* (pp. 3–7). Washington, D.C.: American Psychological Association.

Kasser, T., Koestner, R., & Lekes, N. (2002). Early family experiences and adult values: A 26-year, prospective longitudinal study. *Personality and Social Psychology Bulletin, 28*, 410–422.

Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology, 65*, 410–422.

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22*, 280–287.

Kasser, T., & Ryan, R. M. (2001). Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In P. Schmuck & K. M. Sheldon (Eds.), *Life goals and well-being: Towards a positive psychology of human striving* (pp. 116–131). Goettingen, Germany: Hogrefe & Huber Publishers.

Kasser, T., Ryan, R. M., Couchman, C. E., & Sheldon, K. M. (2004). Materialistic values: Their causes and consequences. In T. Kasser & A. Kanner (Eds.), *Psychology and consumer culture: The struggle for a good life in a materialistic world* (pp. 11–28). Washington, D.C.: American Psychological Association.

Kasser, T., Ryan, R. M., Zax, M., & Sameroff, A. J. (1995). The relations of maternal and social environments to late adolescents' materialistic and prosocial values. *Developmental Psychology, 31*, 907–914.

Kasser, T., & Sheldon, K. M. (2000). Of wealth and death: Materialism, mortality salience, and consumption behavior. *Psychological Science, 11*, 352–355.

Kasser, T., & Sheldon, K.M. (2004). Non-becoming, alienated becoming, and authentic becoming: A goal-based approach. In J. Greenberg, S. Koole, & T. Pzcyzynski (Eds.), *Handbook of experimental existential psychology*. New York: Guilford.

Kim, Y., Kasser, T., & Lee, H. (2003). Self-concept, aspirations, and well-being in South Korea and the United States. *Journal of Social Psychology, 143*, 277–290.

Kofta, M., Weary, G., & Sedek, G. (Eds.) (1998). *Personal control in action: Cognitive and motivational mechanisms*. New York: Plenum Press.

Kuhl, J., & Baumann, N. (2000). Self-regulation and rumination: Negative affect and impaired self-accessibility. In W. J. Perrig & A. Grob (Eds.), *Control of human behavior, mental processes, and consciousness* (pp. 283–305). Mahway, NJ: Lawrence Erlbaum Publishers.

Little, B. R. (1993). Personal projects and the distributed self: Aspects of a conative Psychology. In J. Suls (Ed.), *The self in social perspective: Psychological perspectives on the self* (Vol. 4, pp. 157–185). Hillsdale, NJ: Erlbaum.

Maslow, A. H. (1956). Defense and growth. *Merrill-Palmer Quarterly, 3*, 36–47.

Maslow, A. (1971). *The farther reaches of human nature*. New York: Viking press.

Rhodewalt, F., & Vohs, K. D. (2005). Defensive strategies, motivation, and the self: A self-regulatory process view. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 548–565). New York: Guilford.

Rindfleisch, A., Burroughs, J. E., & Denton, F. (1997). Family structure, materialism, and compulsive consumption. *Journal of Consumer Research, 23*, 312–325.

Rogers, C. R. (1964). Toward a modern approach to values: The valuing process in the mature person. *Journal of Abnormal and Social Psychology, 68*, 160–167.

Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., Deci, E. L. (1999). The American dream in Russia: Extrinsic aspirations and well-being in two cultures. *Personality and Social Psychology Bulletin, 25*, 1509–1524.

Schmuck, P. (2001). Intrinsic and extrinsic life goal preferences as measured via inventories and via priming methodologies: Mean differences and relations with well-being. In P. Schmuck & K. M. Sheldon (Eds.), *Life goals and well-being: Towards a positive psychology of human striving* (pp. 132–147). Goettingen, Germany: Hogrefe & Huber Publishers.

Sheldon, K. M. (2004). *Optimal human being: An integrated multi-level perspective*. New Jersey: Erlbaum.

Sheldon, K. M. (in press). Sex differences in preferences for singles ads that proclaim extrinsic vs. intrinsic values.

Sheldon, K. M., Arndt, J., & Houser-Marko, L. (2003). In search of the organismic valuing process: The human tendency to move towards beneficial goal choices. *Journal of Personality, 71*, 835–869.

Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology, 68*, 531–543.

Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin, 24*, 1319–1331.

Sheldon, K. M., & Kasser, T. (2001). "Getting older, getting better": Personal strivings and psychological maturity across the life span. *Developmental Psychology, 37*, 491–501.

Sheldon, K. M., & Krieger, L. (2004). Does law school undermine law students? Examining changes in goals, values, and well-being. *Behavioral Sciences and the Law, 22*, 261–286.

Solberg, E., Diener, E., & Robinson, M. D. (2004). Why are materialists less satisfied? In T. Kasser & A. Kanner (Eds.), *Psychology and consumer culture: The struggle for a good life in a materialistic world* (pp. 29–48). Washington, D.C.: American Psychological Association.

Twenge, J. M., & Baumeister, R. F. (2005). Social exclusion increases aggression and self-defeating behavior while reducing intelligent thought and prosocial behavior. In D. Abrams, M. A. Hogg, & J. M. Marques (Eds.), *The social psychology of inclusion and exclusion* (pp. 27–46). New York: Psychology Press.

Vansteenkiste, M., Matos, L., Lens, W., & Soenens, B. (2007). Understanding the impact of intrinsic versus extrinsic goal framing on exercise and performance: The conflicting role of task and ego involvement. *Journal of Sports and Exercise, 8*, 771–794.

Williams, G. C., Cox, E. M., Hedberg, V. A., & Deci, E. L. (2000). Extrinsic life goals and health risk behaviors in adolescents. *Journal of Applied Social Psychology, 30*, 1756–1771.